

## **Rubber Material Selection Guide** **HNBR or Highly Saturated Nitrile** **Halogenated Acrylonitrile Butadiene**

▪ Abbreviation	HNBR
▪ ASTM D-2000 Classification	DH
▪ Chemical Definition	Hydrogenated Acrylonitrile Butadiene
▪ RRP Compound Number Category	30000 Series
◆ <b><u>Physical &amp; Mechanical Properties</u></b>	
▪ Durometer or Hardness Range	30 – 95 Shore A
▪ Tensile Strength Range	1,500 – 3,500 PSI
▪ Elongation (Range %)	90 % – 550 %
▪ Abrasion Resistance	Good to Excellent
▪ Adhesion to Metal	Excellent
▪ Adhesion to Rigid Materials	Good to Excellent
▪ Compression Set	Good to Excellent
▪ Flex Cracking Resistance	Fair to Good
▪ Impact Resistance	Excellent
▪ Resilience / Rebound	Good
▪ Tear Resistance	Good to Excellent
▪ Vibration Dampening	Fair to Good
◆ <b><u>Chemical Resistance</u></b>	
▪ Acids, Dilute	Good
▪ Acids, Concentrated	Fair to Good
▪ Acids, Organic (Dilute)	Good
▪ Acids, Organic (Concentrated)	Fair to Good

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◆ **Chemical Resistance**

▪ Acids, Inorganic	Fair to Good
▪ Alcohol's	Good to Excellent
▪ Aldehydes	Fair to Good
▪ Alkalies, Dilute	Good
▪ Alkalies, Concentrated	Poor to Good
▪ Amines	Good
▪ Animal & Vegetable Oils	Good to Excellent
▪ Brake Fluids, Non-Petroleum Based	Fair
▪ Diester Oils	Good
▪ Esters, Alkyl Phosphate	Poor
▪ Esters, Aryl Phosphate	Poor to Fair
▪ Ethers	Poor to Fair
▪ Fuel, Aliphatic Hydrocarbon	Excellent
▪ Fuel, Aromatic Hydrocarbon	Fair to Good
▪ Fuel, Extended (Oxygenated)	Good to Excellent
▪ Halogenated Solvents	Poor to Fair
▪ Hydrocarbon, Halogenated	Poor
▪ Ketones	Poor
▪ Lacquer Solvents	Fair
▪ LP Gases & Fuel Oils	Excellent
▪ Mineral Oils	Good to Excellent
▪ Oil Resistance	Good to Excellent
▪ Petroleum Aromatic	Good to Excellent
▪ Petroleum Non-Aromatic	Good to Excellent
▪ Refrigerant Ammonia	Good
▪ Refrigerant Halofluorocarbons	R-11, R-12, R-13
▪ Refrigerant Halofluorocarbons w/ Oil	R-11, R-12
▪ Silicone Oil	Good to Excellent
▪ Solvent Resistance	Poor

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### ◆ Thermal Properties

- |                                       |                      |
|---------------------------------------|----------------------|
| ▪ Low Temperature Range               | - 70° F to -30° F    |
| ▪ Minimum for Continuous Use (Static) | - 40° F              |
| ▪ Brittle Point                       | - 70° F to -30° F    |
| ▪ High Temperature Range              | + 250° F to + 300° F |
| ▪ Maximum for Continuous Use (Static) | + 325° F             |

### ◆ Environmental Performance

- |                        |                   |
|------------------------|-------------------|
| ▪ Colorability         | Excellent         |
| ▪ Flame Resistance     | Poor              |
| ▪ Gas Permeability     | Fair to Excellent |
| ▪ Odor                 | Good              |
| ▪ Ozone Resistance     | Good to Excellent |
| ▪ Oxidation Resistance | Excellent         |
| ▪ Radiation Resistance | Fair to Good      |
| ▪ Steam Resistance     | Fair to Good      |
| ▪ Sunlight Resistance  | Good to Excellent |
| ▪ Taste Retention      | Fair to Good      |
| ▪ Weather Resistance   | Good to Excellent |
| ▪ Water Resistance     | Excellent         |

For assistance in identifying the appropriate polymer or material, or to develop and formulate an HNBR rubber compound to meet your specific application and performance requirements, please contact Robinson Rubber Products at e-mail:

[sales@robinsonrubber.com](mailto:sales@robinsonrubber.com) or phone: +1-763-535-6737.

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